

Positive and Negative Reinforcers: How About the Second and Third Functions?

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To begin, Skinner made the fundamentally important distinction of two types of conditioning, respondent and operant. Involving different research traditions, apparatus, and methods, it is also the case that the two are studied separately. That has had effects that have not been fully recognized and dealt with. Very centrally, it is important to realize and deal with the fact that both types of conditioning inevitably occur in research even though the experimenter is interested in studying only one. When food is presented as an unconditioned stimulus in classical conditioning, it perforce is contingent on some behavior whose strength will thereby be affected. When a food pellet is presented contingent on a key peck or bar press in operant conditioning, perforce that reinforcing stimulus will also elicit emotional responses (salivation being one) that will be conditioned to the experimental chamber. (This is true because food as a stimulus has both a reinforcing function and an emotion-eliciting function; see Staats, 1975.)

As Michael astutely laid out 30 years ago and Baron and Galizio (2005) have affirmed, the effects on the operant behavior that is reinforced are the same for both positive and negative reinforcers. But that does not deal with the respondent conditioning involved. And it does not consider behaviors other than the one that is reinforced. With respect to the first, if all the conditioning occurring to the experimental animal were measured, the difference in

positive and negative reinforcers would become evident. When withdrawal of a negative reinforcer is the contingency that increases the strength of the operant behavior, the animal also will be conditioned to a negative emotional response to the experimental chamber (for a negative reinforcer must be introduced before it can be withdrawn). However, when a positive reinforcer is used to strengthen the operant behavior, a positive emotional response will be conditioned to the stimulus of the operant chamber.

Someone disinterested in emotional responding might say “Who cares? We are concerned with operant behavior.” So it is important to indicate that as a result of the emotional conditioning during operant conditioning, operant behavior other than the bar press will be affected. Let me sketch an experimental apparatus and procedure for studying what is involved. The experimental apparatus would be an operant conditioning chamber with a see-through wall opposite the bar manipulandum. The see-through wall would contain a door that when open would connect to another, empty chamber. The study would involve 2 rats. One would be conditioned to make a bar-press response using food, and the other would be so conditioned using escape from shock. Then each would be placed in the outer chamber, and the door would be opened to the operant chamber so that each had access to the operant chamber. The animal whose bar press had been reinforced with food would enter the chamber, go to the bar, and sniff around it and the feeder. The shock-

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escape animal would not enter the chamber. A child who is punished unless he behaves well in school may learn as well as a child who behaves the same because of positive reinforcement. But the two will learn different emotional responses to school, and that will affect their behavior towards school, under open conditions. These principles—including the last effect that involves the third function of stimuli, discriminative control—are described more fully in Harms and Staats (1978), Staats (1975, 1996), Staats and Hammond (1972), and Staats and Warren (1974).

Behaviorally, when all behavior is taken into account, there is a great difference between positive and negative reinforcers. Basic studies should be conducted with animals to systematically treat the relation of respondent and operant conditioning over the various behavioral variables (e.g., deprivation-satiation). (The above apparatus is only a first suggestion.) Beginning studies with humans are available (Harms & Staats, 1978; Staats & Hammond, 1972; Staats & Warren, 1974), other studies have

been interpreted in terms of the principles, and behavior analyses have been made of functional human behavior (see Staats, 1975, 1996). There is a very large field of animal and human research here for our field to pursue.

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